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 NEWS  1          Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2  Sep 17  IMSworld Pharmaceutical Company Directory name change
                  to PHARMASEARCH
 NEWS  3  Oct 09  Korean abstracts now included in Derwent World Patents
                  Index
 NEWS  4  Oct 09  Number of Derwent World Patents Index updates increased
 NEWS  5  Oct 15  Calculated properties now in the REGISTRY/ZREGISTRY File
 NEWS  6  Oct 22  Over 1 million reactions added to CASREACT
 NEWS  7  Oct 22  DGENE GETSIM has been improved
 NEWS  8  Oct 29  AAASD no longer available
 NEWS  9  Nov 19  New Search Capabilities  USPATFULL and USPAT2
 NEWS 10  Nov 19  TOXCENTER(SM) - new toxicology file now available on STN
 NEWS 11  Nov 29  COPPERLIT now available on STN
 NEWS 12  Nov 29  DWPI revisions to NTIS and US Provisional Numbers
 NEWS 13  Nov 30  Files VETU and VETB to have open access
 NEWS 14  Dec 10  WPINDEX/WPIDS/WPIX New and Revised Manual Codes for 2002
 NEWS 15  Dec 10  DGENE BLAST Homology Search
 NEWS 16  Dec 17  WELDASEARCH now available on STN
 NEWS 17  Dec 17  STANDARDS now available on STN
 NEWS 18  Dec 17  New fields for DPCI
 NEWS 19  Dec 19  CAS Roles modified
 NEWS 20  Dec 19  1907-1946 data and page images added to CA and CAplus
 NEWS 21  Jan 25  BLAST(R) searching in REGISTRY available in STN on the Web
 NEWS 22  Jan 25  Searching with the P indicator for Preparations
 NEWS 23  Jan 29  FSTA has been reloaded and moves to weekly updates
 NEWS 24  Feb 01  DKILIT now produced by FIZ Karlsruhe and has a new update
                  frequency
 NEWS 25  Feb 19  Access via Tymnet and SprintNet Eliminated Effective 3/31/02

 NEWS EXPRESS  February 1 CURRENT WINDOWS VERSION IS V6.0d,
               CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),
               AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002
 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS INTER    General Internet Information
 NEWS LOGIN    Welcome Banner and News Items
 NEWS PHONE    Direct Dial and Telecommunication Network Access to STN
 NEWS WWW      CAS World Wide Web Site (general information)

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FILE 'HOME' ENTERED AT 11:29:07 ON 28 FEB 2002

=> file caplus
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FILE COVERS 1907 - 28 Feb 2002 VOL 136 ISS 9
FILE LAST UPDATED: 26 Feb 2002 (20020226/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

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The P indicator for Preparations was not generated for all of the CAS Registry Numbers that were added to the CAS files between 12/27/01 and 1/23/02. As of 1/23/02, the situation has been resolved. Searches and/or SDIs in the H/Z/CA/CAplus files incorporating CAS Registry Numbers with the P indicator executed between 12/27/01 and 1/23/02 may be incomplete. See the NEWS message on this topic for more information.

```
=> s thiol?(w)chitosan
         67200 THIOL?
         12013 CHITOSAN
           629 CHITOSANS
         12031 CHITOSAN
                 (CHITOSAN OR CHITOSANS)
L1           3 THIOL?(W)CHITOSAN

=> d L1 1-3 ti

L1   ANSWER 1 OF 3  CAPLUS  COPYRIGHT 2002 ACS
TI   Synthesis and in vitro evaluation of chitosan-thioglycolic acid
conjugates

L1   ANSWER 2 OF 3  CAPLUS  COPYRIGHT 2002 ACS
TI   Thiolated polymers - thiomers: development and in vitro evaluation of
     chitosan-thioglycolic acid conjugates
```

L1 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS
TI Synthesis and in vitro evaluation of chitosan-cysteine conjugates

=> d L1 1-3 ibib,abs

L1 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:600181 CAPLUS
TITLE: Synthesis and in vitro evaluation of chitosan-thioglycolic acid conjugates
AUTHOR(S): Bernkop-Schnurch, Andreas; Hopf, Thorid E.
CORPORATE SOURCE: Institute of Pharmaceutical Technology and Biopharmaceutics, Center of Pharmacy, University of Vienna, Vienna, A-1090, Austria
SOURCE: Sci. Pharm. (2001), 69(2), 109-118
CODEN: SCPHA4; ISSN: 0036-8709
PUBLISHER: Oesterreichische Apotheker-Verlagsgesellschaft
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The cationic thiomer chitosan-thioglycolic acid (TGA) shows excellent mucoadhesive features. In order to deepen the knowledge concerning this new excipient the optimization of its synthesis and a detailed characterization of its properties was the objective of this study Mediated by increasing quantities of a carbodimide, thioglycolic acid was covalently attached to chitosan forming amide bonds with the primary amino groups of the polymer Detd. with Ellman's reagent, 38 .+-. 3, 104 .+-. 2, 685 .+-. 43, and 885 .+-. 7 .mu.mol thiol groups (n=3, .+-. SD) were bound per g polymer at carbodiimide concns. of 50, 75, 100, and 125 mM, resp. The immobilized thiol groups displayed a comparatively higher reactivity to form disulfide bonds than the thiol groups in a corresponding mixt. of chitosan and free unconjugated TGA. In an aq. 0.5% (m/v) chitosan-TGA gel 59 .+-. 5% of the thiol groups formed disulfide bonds within 6 h at pH 6.0, whereas merely 5 .+-. 3% were oxidized in the corresponding phys. mixt. of chitosan and TGA. Diffusion studies showed that the modified polymer was capable of binding cysteine and cysteine Me ester. The result supports the theory that the improved mucoadhesive properties of **thiolated chitosan** are based on the formation of disulfide bonds with cysteine moieties of mucus glycoproteins. Because of its availability via an efficient synthetic pathway and its mucoadhesive properties based on the capability to bind cysteine subunits, chitosan-TGA seems to be a promising new excipient for various drug delivery systems.
REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2001:520176 CAPLUS
TITLE: Thiolated polymers - thiomers: development and in vitro evaluation of chitosan-thioglycolic acid conjugates
AUTHOR(S): Kast, C. E.; Bernkop-Schnurch, A.
CORPORATE SOURCE: Center of Pharmacy, Institute of Pharmaceutical

Technology and Biopharmaceutics, University of Vienna,
Vienna, A-1090, Austria
SOURCE: Biomaterials (2001), 22(17), 2345-2352
CODEN: BIMADU; ISSN: 0142-9612
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The aim of this study was to improve mucoadhesive properties of chitosan by the covalent attachment of thiol moieties to this cationic polymer. Mediated by a carbodiimide, thioglycolic acid (TGA) was covalently attached to chitosan. This was achieved by the formation of amide bonds between the primary amino groups of the polymer and the carboxylic acid group of TGA. Dependent on the pH-value and the wt. ratio of polymer to TGA during the coupling reaction the resulting thiolated polymers, the so-called thiomers, displayed 6.58, 9.88, 27.44, and 38.23 .mu.mole thiol groups per g polymer. Tensile studies carried out with these chitosan-TGA conjugates on freshly excised porcine intestinal mucosa demonstrated a 6.3-, 8.6-, 8.9-, and 10.3-fold increase in the total work of adhesion (TWA) compared to the unmodified polymer, resp. In contrast, the combination of chitosan and free unconjugated TGA showed almost no mucoadhesion. These data were in good correlation with further results obtained by another mucoadhesion test demonstrating a prolonged residence time of **thiolated chitosan** on porcine mucosa. The swelling behavior of all conjugates was thereby exactly in the same range as for an unmodified polymer pretreated in the same way. Furthermore, it could be shown that chitosan-TGA conjugates are still biodegradable by the glycosidase lysozyme. According to these results, chitosan-TGA conjugates represent a promising tool for the development of mucoadhesive drug delivery systems.

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 2000:31626 CAPLUS
DOCUMENT NUMBER: 132:98016
TITLE: Synthesis and in vitro evaluation of chitosan-cysteine conjugates
AUTHOR(S): Bernkop-Schnurch, Andreas; Brandt, Ursula-Maria; Clausen, Andreas E.
CORPORATE SOURCE: Institut Pharmazeutische Technologie, Pharmazie-Zentrum, Univ. Wien, Vienna, A-1090, Austria
SOURCE: Sci. Pharm. (1999), 67(4), 197-208
CODEN: SCPHA4; ISSN: 0036-8709
PUBLISHER: Oesterreichische Apotheker-Verlagsgesellschaft
DOCUMENT TYPE: Journal
LANGUAGE: German

AB Mediated by a water-sol. carbodiimide cysteine was covalently attached to chitosan. According to the amt. of carbodiimide during the coupling reaction, 0.25, 0.7, and 1.2% of Cys were thereby bound to the polymer. Whereas the mucoadhesive properties of chitosan could not be improved due to this modification, the stability of matrix tablets based on **thiolated chitosan** might be strongly improved because of

the formation of inter- and/or intramol. disulfide bonds within these polymers. This oxidative process can be accelerated at higher temps. and by lowering the proton concn. on the polymer. Permeation studies carried out by chambers with freshly excised intestinal mucosa from guinea pigs demonstrated furthermore an improved permeation enhancing effect of chitosan due to the covalent attachment of Cys on it.
REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

```
=> s thiol?(w)pectin
         67200 THIOL?
         17317 PECTIN
          4168 PECTINS
         18878 PECTIN
                 (PECTIN OR PECTINS)
L2           0 THIOL?(W)PECTIN

=> s thiol?(w)hyaluronic
         67200 THIOL?
         10110 HYALURONIC
             1 HYALURONICS
         10110 HYALURONIC
                 (HYALURONIC OR HYALURONICS)
L3           0 THIOL?(W)HYALURONIC

=> s thiol?(w)carboxymethylcellulose
         67200 THIOL?
          5091 CARBOXYMETHYLCELLULOSE
            48 CARBOXYMETHYLCELLULOSES
          5111 CARBOXYMETHYLCELLULOSE
                 (CARBOXYMETHYLCELLULOSE OR CARBOXYMETHYLCELLULOSES)
L4           1 THIOL?(W)CARBOXYMETHYLCELLULOSE

=>

=> d L4 ti

L4   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2002 ACS
TI   Thiolated carboxymethylcellulose: in vitro evaluation
     of its permeation enhancing effect on peptide drugs


=> d l4 ibib

L4   ANSWER 1 OF 1  CAPLUS  COPYRIGHT 2002 ACS
ACCESSION NUMBER:        2001:24250  CAPLUS
DOCUMENT NUMBER:         135:308715
TITLE:                   Thiolated carboxymethylcellulose:
                         in vitro evaluation of its permeation enhancing
effect
                         on peptide drugs
AUTHOR(S):               Clausen, A. E.; Bernkop-Schnurch, A.
CORPORATE SOURCE:        Institute of Pharmaceutical Technology and
                         Biopharmaceutics, Centre of Pharmacy, University of
                         Vienna, Austria
SOURCE:                  Eur. J. Pharm. Biopharm. (2001), 51(1), 25-32
                         CODEN: EJPBEL; ISSN: 0939-6411
```

PUBLISHER: Elsevier Science Ireland Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
REFERENCE COUNT: 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS
RECORD. ALL CITATIONS AVAILABLE IN THE RE
FORMAT

=> s thiol?(w)hydroxypropylcellulose
67200 THIOL?
1581 HYDROXYPROPYLCELLULOSE
4 HYDROXYPROPYLCELLULOSES
1582 HYDROXYPROPYLCELLULOSE
(HYDROXYPROPYLCELLULOSE OR HYDROXYPROPYLCELLULOSES)
L5 0 THIOL?(W)HYDROXYPROPYLCELLULOSE

=> s thiol? and hydroxypropylcellulose
67200 THIOL?
1581 HYDROXYPROPYLCELLULOSE
4 HYDROXYPROPYLCELLULOSES
1582 HYDROXYPROPYLCELLULOSE
(HYDROXYPROPYLCELLULOSE OR HYDROXYPROPYLCELLULOSES)
L6 3 THIOL? AND HYDROXYPROPYLCELLULOSE

=> d L6 1-3 ti,kwic

L6 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2002 ACS
TI Curly hair-straightening composition comprising keratin-reducing substances and alcohols
AB . . . sufficiently straighten natural curly or frizzy hair without damaging the hair. Thus, a 1-pack product contained NaHSO3 2.0, 2-methyl-2,4-pentanediol 30.0, **hydroxypropylcellulose** 1.5, water 64.0 wt.%, and monoethanolamine to adjust the pH to 9.5.
ST hair straightening compn **thiol** alc

L6 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2002 ACS
TI Tetrahydro-5-oxo-2-(3-oxo-2-isoxazolidinyl)-2-furancarboxylates
AB . . . bacteria, e.g., Staphylococcus aureus with min. inhibitory concn.
of 6.25 .mu.g/mL. Tablets contg. II 300, corn starch 50, lactose 28, **hydroxypropylcellulose** L 20 and Mg stearate 2 mg were prepd.
IT 75-08-1, Ethanethiol 108-98-5P, Thiophenol, preparation
RL: RCT (Reactant)
(**thiolation** by, of bromooxoglutaric acid)
IT 89469-94-3
RL: RCT (Reactant)
(**thiolation** of, by thiophenol)

L6 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS
TI **Thiol** derivatives of cellulose as supports for the immobilization of non-**thiol** enzymes
TI **Thiol** derivatives of cellulose as supports for the immobilization of non-**thiol** enzymes
AB . . . were introduced into cellulose in 2 ways. Chlorodeoxycellulose gave with Na2S2O3 a thiosulfate deriv., which was reduced to mercaptocellulose. Similarly, 3-chloro-2-**hydroxypropylcellulose** was converted to epoxide, which on reaction with Na2S2O2 and redn. gave 3-mercapto-2-**hydroxypropylcellulose**. Acetylcholinesterase (EC 3.1.1.7) from bovine erythrocytes and from elec. eel,

butyrylcholinesterase (EC 3.1.1.8), and trypsin (EC 3.4.21.4) were immobilized on. . .

ST enzyme immobilization cellulose **thiol** deriv; acetylcholinesterase immobilization cellulose **thiol** deriv; cholinesterase immobilization cellulose **thiol** deriv; trypsin immobilization cellulose **thiol** deriv

IT Enzymes
RL: PROC (Process)
(immobilization of, on cellulose **thiol** derivs.)

IT 9000-81-1 9001-08-5 9002-07-7
RL: PROC (Process)
(immobilization of, on cellulose **thiol** derivs.)

IT 9001-08-5DP, mercaptobutylamidino deriv. 9002-07-7DP, isothiocyanatopropyl deriv.
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and immobilization on cellulose **thiol** derivs.)

IT 9004-34-6DP, **thiol** derivs. 37324-27-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and use in enzyme immobilization)

=> d L6 3 ibib

L6 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1981:564692 CAPLUS
DOCUMENT NUMBER: 95:164692
TITLE: **Thiol** derivatives of cellulose as supports for the immobilization of non-**thiol** enzymes
AUTHOR(S): Gemeiner, Peter; Zemek, Jiri
CORPORATE SOURCE: Inst. Chem., Slovak Acad. Sci., Bratislava, 809 33, Czech.
SOURCE: Collect. Czech. Chem. Commun. (1981), 46(7), 1693-700
CODEN: CCCCAK; ISSN: 0366-547X
DOCUMENT TYPE: Journal
LANGUAGE: English

=> s thiol? and pectin
67200 THIOL?
17317 PECTIN
4168 PECTINS
18878 PECTIN
(PECTIN OR PECTINS)
L7 18 THIOL? AND PECTIN

=> d L18 1-18 ti
L18 NOT FOUND
The L-number entered has not been defined in this session, or it has been deleted. To see the L-numbers currently defined in this session, enter DISPLAY HISTORY at an arrow prompt (=>).

=> d L7 1-18 ti

L7 ANSWER 1 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Adsorbent preparation, dry process for crosslinked polysaccharides, and recovery and separation of arsenic ions using the same

L7 ANSWER 2 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Oral pharmaceutical preparation embedded in an oily matrix and coated by enteric coating polymers

L7 ANSWER 3 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Kiwi protein inhibitor of **pectin** methylesterase. Amino-acid sequence and structural importance of two disulfide bridges

L7 ANSWER 4 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Purification and some properties of protease from Actinidia eriantha Benth

L7 ANSWER 5 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Keratinocyte growth factor-2 formulations for promotion of wound healing

L7 ANSWER 6 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Status of the **thiol**-dependent cytoprotectant systems under conditions of lead intoxication and high-**pectin** diet

L7 ANSWER 7 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Effect of mercurials on the activity of **pectin** methylesterase from egg plant (Solanum melongena L.)

L7 ANSWER 8 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Pharmaceutical compositions containing biologically active agents contained within a polymeric shell

L7 ANSWER 9 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Stabilized suspension of magnetic particles and its preparation and use in NMR diagnosis

L7 ANSWER 10 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Characterization of long-term extension of isolated cell walls from growing cucumber hypocotyls

L7 ANSWER 11 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Purification and properties of actinidin from Actinidia chinensis

L7 ANSWER 12 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI An alkaline extracellular protease produced by Cladosporium cucumerinum and its possible importance in the development of scab disease of cucumber seedlings

L7 ANSWER 13 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Deodorization by aerobes

L7 ANSWER 14 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI **Pectin** esterase(s) from sour oranges (Citrus aurartium Linn)

L7 ANSWER 15 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Rust remover containing a mercapto compound

L7 ANSWER 16 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Colorimetric determination of volatile sulfur compounds in foods. II. Reaction with bis(p-nitrophenyl) disulfide

L7 ANSWER 17 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Origin of methanol and dimethyl sulfide from cooked foods

L7 ANSWER 18 OF 18 CAPLUS COPYRIGHT 2002 ACS
TI Reductones derived from 3,4-dihydroxy-2,5-dicarboxylic esters of furan,

thiophene, N-phenylpyrrole, and selenophene

```
=> s thiol?(p)hyaluronic
         67200 THIOL?
         10110 HYALURONIC
             1 HYALURONICS
         10110 HYALURONIC
                 (HYALURONIC OR HYALURONICS)
L8          21 THIOL?(P)HYALURONIC

=> d L8 1-21 ti,kwic
```

L8 ANSWER 1 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Gold plating and biofunctionalization of ferromagnetic magnetic tweezers: Application for local studies of soft surface-grafted polymer films
AB . . . resulting gold layer is a versatile platform for further biofunctionalization using a wide variety of std. coupling protocols based on **thiol** chem. Several methods, such as electron microscopy, elemental anal., x-ray powder diffraction, and XPS, have been used for quant. and. . . . of the coatings. The magnetic tweezers are used for local quant. characterization of the elasticity of soft surface-grafted films of **hyaluronic** acid. A method for the calibration of the magnetization of each bead chosen for the measurement is introduced which is. . .

L8 ANSWER 2 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Hyaluronic acid-protein conjugates, pharmaceutical compositions and related methods
AB . . . present invention broadly relates to the field of protein modification and, more specifically, the attachment of low mol. wt., derivatized **hyaluronic** acid polymer to proteins including leptin and analogs thereof (the term "protein" as used herein is synonymous with "polypeptide" or "peptide" unless otherwise indicated). The **hyaluronic** acid-protein conjugates of the present invention exhibit longer sustained blood levels than formulations contg. protein alone, thus providing an important advantage in the therapeutic setting. Conjugates of low mol. wt. sodium hyaluronate with free-**thiol** osteroprotegrin was prepd.

L8 ANSWER 3 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Synthesis of .beta.-D-glucopyranosyl(1.fwdarw.3)-1-**thiol**-.beta.-glucosamine disaccharide derivative as building block for the synthesis of **hyaluronic** acid
TI Synthesis of .beta.-D-glucopyranosyl(1.fwdarw.3)-1-**thiol**-.beta.-glucosamine disaccharide derivative as building block for the synthesis of **hyaluronic** acid
ST glucopyranosyl **thiolglucosamine** prepn **hyaluronic** acid building block
IT Glycosylation
(synthesis of .beta.-D-glucopyranosyl(1.fwdarw.3)-1-**thiol**-.beta.-glucosamine, a building block for the synthesis of **hyaluronic** acid)
IT 9004-61-9P, **Hyaluronic** acid
RL: PNU (Preparation, unclassified); PREP (Preparation)
(synthesis of .beta.-D-glucopyranosyl(1.fwdarw.3)-1-**thiol**-.beta.-glucosamine, a building block for the synthesis of **hyaluronic** acid)
IT 66-84-2, D-Glucosamine hydrochloride 76-03-9, Trichloroacetic acid,

reactions 83-87-4, D-Glucose pentaacetate 98-88-4, Benzoyl chloride 106-45-6, p-Thiocresol 116-11-0 123-76-2, Levulinic acid 1125-88-8, Benzaldehyde dimethyl acetal 17341-93-4
RL: RCT (Reactant)
(synthesis of .beta.-D-glucopyranosyl(1.fwdarw.3)-1-**thiol**-.beta.-glucosamine, a building block for the synthesis of **hyaluronic** acid)

IT 1152-39-2P 28244-94-2P 97562-23-7P 122210-01-9P 219518-19-1P 220645-20-5P 323195-38-6P 323195-39-7P 323195-40-0P 323195-41-1P 323195-42-2P 323195-43-3P 323195-44-4P 323195-45-5P 323195-46-6P 323195-47-7P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(synthesis of .beta.-D-glucopyranosyl(1.fwdarw.3)-1-**thiol**-.beta.-glucosamine, a building block for the synthesis of **hyaluronic** acid)

IT 323195-37-5P
RL: SPN (Synthetic preparation); PREP (Preparation)
(synthesis of .beta.-D-glucopyranosyl(1.fwdarw.3)-1-**thiol**-.beta.-glucosamine, a building block for the synthesis of **hyaluronic** acid)

L8 ANSWER 4 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Oxidative damage of eye tissues and protection by thioctic acid
AB . . . in the mol. wt. compn. of bovine-lens homogenates mediated by illuminated riboflavin. Another indicator detected was the amt. of free **thiol** groups. Only the reduced form of thioctic acid (dihydrothioctic acid) protected from photo-oxidative changes, comparable to the synthetic dithiol dithiothreitol. . . by the oxidative fragmentation of .alpha.-keto-.gamma.-methiol-butyric acid (KMB) yielding ethylene. Both, thioctic acid and its reduced form, decreased ethylene formation. **Hyaluronic** acid is an important structural glycan in the vitreous. Oxidative degrdn. of **hyaluronic** acid by hypochlorous acid or Fenton-type oxidants is also diminished by thioctic acid, measured by mol.-wt. anal. of **hyaluronic** acid.

L8 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Thiol-containing biomaterials for medical and pharmaceutical use
IT 9004-34-6, Cellulose, biological studies 9004-54-0, Dextran, biological studies 9004-61-9, **Hyaluronic** acid 9005-25-8, Starch, biological studies 9007-28-7, Chondroitin sulfate 9012-76-4, Chitosan 26780-50-7, Poly(glycolide-lactide)
RL: DEV (Device component use); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(**thiol**-contg. biomaterials for medical and pharmaceutical use)

L8 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Synthetic polysulfated hyaluronic acid is a potent inhibitor for tumor necrosis factor production
AB . . . blocks for synthesizing nontoxic drugs for suppression of tumor necrosis factor (TNF) prodn. by inflammatory cells, we have chem. modified **hyaluronic** acid (HA) and tested its effects in blocking TNF-.alpha. and TNF-.beta. prodn. in vitro. HA was chosen mainly for its. . . decreasing the extent of polysulfation, the inhibitory effect of HAs on TNF-.alpha. prodn. was diminished. Other chem. modifications, including deacetylation, **thiolation**, or redn. of the carboxylic groups, could not increase the efficacy of HA in suppression of

TNF-.alpha. prodn. Naturally polysulfated. . .

L8 ANSWER 7 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Inhibitory actions of **thiol** compounds in HOCl induced degradation of **hyaluronic** acid
TI Inhibitory actions of **thiol** compounds in HOCl induced degradation of **hyaluronic** acid
AB Effects of **thiol** compds. N-(N-L-.gamma.-glutamyl-L-cysteinyl)glycine, N-(2-mercaptopropionyl)glycine, and cysteine on the degrdn. of **hyaluronic** acid were investigated. Scavenging actions of **thiol** compds. on HOCl were examd.

L8 ANSWER 8 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Endothelial cell stimulation of smooth muscle glycosaminoglycan synthesis can be accounted for by transforming growth factor beta activity
AB . . . Here it is shown that the factor responsible is transforming growth factor beta (TGF-.beta.), as assessed by (1) proteinase and **thiol** sensitivity, (2) heat and acid enhancement of ECCM activity, and (3) neutralization of ECCM activity by anti-TGF-.beta. Ig. Anti-TGF-.beta. neutralization. . . showed that ECCM from EC of varying densities stimulated individual GAG to varying degrees. ECCM from low-d. EC preferentially stimulated **hyaluronic** acid (HA), whereas ECCM from intermediate- and high-d. cultures stimulated increasing amts. of sulfated GAG. Exposure of SMC to varying. . .

L8 ANSWER 9 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI The mechanism of chondrocyte hydrogen peroxide damage. Depletion in intracellular ATP due to suppression of glycolysis caused by oxidation of glyceraldehyde-3-phosphate dehydrogenase
AB . . . be due to the oxidative inactivation of glyceraldehyde-3-phosphate dehydrogenase (G-3-PDH). Apparently, intrachondrocyte oxidant damage occurs through oxidn. of the sensitive **thiol** (-SH) residue at the active center of G-3-PDH, with subsequent redn. in the rate of glycolytic ATP synthesis and the intracellular concn. of ATP which is required for DNA, protein, proteoglycan, and **hyaluronic** acid synthesis.

L8 ANSWER 10 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI **Hyaluronic** acid degrading reactions under hyperthermic conditions and effects of **thiols**
TI **Hyaluronic** acid degrading reactions under hyperthermic conditions and effects of **thiols**
AB **Thiols** promoted the formation of highly oxidizing **hyaluronic** acid (HA)-degrading species in the presence of chelated (EDTA) Fe3+, Fe2+, and Cu2+ compds. Hyperthermia (40-44.degree.) led to an addnl. increase in the prodn. of HA-degrading species by the interaction of **thiols** with EDTA-complexed transition metals. The most efficient **thiols** were cysteamine and cysteine; GSH, dithiothreitol, and N-acetylcysteine promoted the generation of the highly reactive radicals to a minor extent.
IT Transition metals, compounds
RL: BIOL (Biological study)
(EDTA complexes, oxygen radical formation in presence of, hyperthermia and **thioles** effects on, **hyaluronic** acid degrdn. in relation to)
IT Fever and Hyperthermia
Thiols, biological studies

RL: BIOL (Biological study)
(oxygen radical formation in presence of transition metal-EDTA complexes response to, **hyaluronic** acid degrdn. in relation to)

IT 7782-44-7D, radicals
RL: FORM (Formation, nonpreparative)
(formation of, **thiols** promotion of, hyperthermia effect on, **hyaluronic** acid degrdn. in relation to)

IT 60-00-4D, transition metal complexes 7439-89-6D, EDTA complexes 7440-50-8D, EDTA complexes 7447-39-4D, EDTA complexes 7705-08-0D, EDTA
complexes 7720-78-7D, EDTA complexes
RL: BIOL (Biological study)
(oxygen radical formation in presence of, hyperthermia and **thiols** effects on, **hyaluronic** acid degrdn. in relation to)

L8 ANSWER 11 OF 21 CAPLUS COPYRIGHT 2002 ACS

TI Copper dependent control of the enzymic and phagocyte induced degradation of hyaluronic acid, synovial fluid and cytochrome c

AB Studies on the oxidn. of Cu-thionein by xanthine oxidase are described in detail. Cu2+ was released by Cu(I)-**thiolate** (chromophore of Cu-thionein) degrdn. Complete but reversible inhibition of xanthine oxidase occurred in the presence of 5 .mu.M Cu; diminished xanthine oxidase inhibition occurred with the Cu(I)-**thiolate** chromophore of yeast Cu-thionein. The xanthine oxidase-dependent oxidn. of xanthine or hypoxanthine degraded **hyaluronic** acid (a component of synovial fluid), and Cu-thionein and CuSO4 inhibited the degrdn. Effects on bovine synovial fluid also are. . . c by phagocyte-generated hypochlorite was a measure of polymorphonuclear leukocyte (PMN) activity. Activated PMNs produce excited O species which depolymerize **hyaluronic** acid but no degrdn. was obsd. on the presence of ceruloplasmin and CuSO4; some degrdn. was obsd. with Cu-thionein. Relations. . .

L8 ANSWER 12 OF 21 CAPLUS COPYRIGHT 2002 ACS

TI Radiation induced depolymerization of hyaluronic acid (HA) in aqueous solutions at pH 7.4

AB Radiolytic depolymn. of **hyaluronic** acid (HA, a heteropolysaccharide) in aq. solns. under a variety of conditions demonstrates that the damaging effect of radiolytic radical. . . order OH.cntdot.>e-aq>O-2. Cysteine, penicillamine, and dithiothreitol protected against primary radiolytic species. The enzyme superoxide dismutase (SOD) and the above 3 **thiols** do not protect against the radiolytic species generated by the .lambda.-irradn. of aerated Na formate solns. The results also indicate that the reaction between CO-2 anion and **hyaluronic** acid is faster than the reaction between O-2 and **hyaluronic** acid and that CO-2 anions are not scavenged by superoxide dismutase. The results further suggest that tert-BuOH radicals interact with **hyaluronic** acid and reduce the viscosity of HA solns. Preliminary pulse radiolysis expts. do demonstrate a reaction between CO-2 radical and **hyaluronic** acid.

L8 ANSWER 13 OF 21 CAPLUS COPYRIGHT 2002 ACS

TI Connective tissue activation. XXVIII. A connective tissue activating peptide from human urine

AB . . . be different from EGF and IgG. This urinary connective tissue-activating factor (CTAP-U) [92307-84-1] is nondialyzable, labile to protease, stable to **thiols**, heat, and acid, and has an acidic isoelec. point. Purified prepns. of CTAP-U have biol. activities that

cause human connective tissue cells to synthesize incremental amts. of 14C-labeled **hyaluronic** acid [9004-61-9], [35S]proteoglycans, and [3H]DNA in vitro. The cell spectrum responsive to this substance includes human synovial cells, human chondrocytes,. . .

L8 ANSWER 14 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Cartilage-degrading neutral proteinase secreted by Yoshida sarcoma cells. Purification and properties
AB . . . help of a new assay system for measurement of proteoglycan core protein degrdn., which utilizes aminopropyl glass beads derivatized with **hyaluronic** acid. This enzyme, with a neutral pH optimum and apparent mol. wt. of .apprx.30,000, was secreted into culture medium in. . . form. It was resistant to cartilage-derived inhibitors and to .alpha.2-macroglobulin as well as to synthetic and natural inhibitors of serine, **thiol**, and carboxyl proteinases. It was inhibited by 1,10-phenanthroline and **thiols** at relatively high concns., and therefore is probably a metalloproteinase. The enzyme degraded type V collagen, types I and II. . .

L8 ANSWER 15 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Primary selection and study of the properties of chemical agents for protection from radiation injury
AB . . . presented for a primary selection and study of radioprotectors, and applied in studying the protective effects on erythrocytes of aminoalkyl **thiols**, aminoalkyl disulfides, aminoalkylisothiuronium compds., Bunte salts, and thiazolidines. A radiomimetic effect of lipoidal toxic compds. produced during irradn. is significantly reduced when phospholipids from animal tissues are added. Polysaccharides except **hyaluronic** acid exhibited a similar action in the erythrocyte radiomimetic model to that of phospholipids.

L8 ANSWER 16 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Inhibition of steroid .DELTA.4-reductase by polysulfated polysaccharides and para-chloromercuribenzoic acid
AB Four heparinoids and 2 naturally occurring, high mol. wt. polysaccharides with varying contents, including heparin, chondroitin sulfate, and **hyaluronic** acid, were assayed for inhibitory effects on rat liver steroid .DELTA.4-reductase activity. All active compds. had a 15-18% S content,. . . of cortisone reductase of only 60%, while p-chloromercuribenzoate (PCMB) (5 .times. 10-4M) completely inhibited the enzyme, indicating the importance of **thiol** groups to enzymic activity. PCMB and heparin were additive in a manner which gave greater inhibition than could be demonstrated. . .

L8 ANSWER 17 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Depolymerization of hyaluronic acid by autoxidants and radiations
AB The effects of x-rays, .beta.-rays (32P internally), and autoxidants were compared for the aerobic depolymerization of **hyaluronic** acid. A 0.02mM soln. of ascorbic acid reduced the viscosity of **hyaluronic** acid solns. at about the same rate as 2400 rads of x-rays or .beta.-rays. The yields (G values) were low, about 0.015. Visible light also caused the degradation of **hyaluronic** acid in the presence of riboflavine as a sensitizer. A survey of compds. with possible autoxidant properties showed that the following structures were assocd. with such activity: enediols (reduced or oxidized), quinones and hydroquinones, many **thiols** (not disulfides), m-nitrophenol, and a few metallic ions, esp. Cu+, Fe++, and Sn++. Antioxidant activity of these compds. was tested extensively for the system **hyaluronic** acid-ascorbic acid,

and some compds. were studied in the radiation systems. The effects in both systems were similar, but were. . .

L8 ANSWER 18 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Inactivation of solutions of transforming deoxyribonucleic acid by .gamma.-rays in the presence of protective substances
AB . . . had a protective effect. The rate of I inactivation was unaffected by irradiation rates of 2.4, 8.3, and 33 kr./hr.; **hyaluronic** acid from human umbilical cord, RNA, or yeast ext. used at 1 mg./cc. had a protective effect. The protective effect. . . the original, were 1, 8, 10, 17, 57, 170, 76, 330, 719, 92, and 560 kr./hr. for control; 1 mg./cc. **hyaluronic** acid, yeast RNA, or yeast ext. 0.25 and 1.0 mg./cc. thiourea; 0.25, 1.0, and 2.5 mg./cc. cysteine; and 0.25 and 1.0 mg./cc. mercaptoethanol, resp. The protective effect of **thiols** is considered specific and different from that of the yeast ext.

L8 ANSWER 19 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Depolymerization of hyaluronic acid by the oxidative-reductive depolymerization (ORD) reaction
AB cf. CA 54, 4692d, 24922g. **Hyaluronic** acid (I) was depolymerized in vitro by various biol. occurring reducing agents, such as ferrous ions, ascorbic acid, hydroquinones, and **thiol** compds. Depolymerization was followed by the fall in intrinsic viscosity of 40 mg. % solns. of I in 0.2M phosphate. . .

L8 ANSWER 20 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI State of polysaccharides (hyaluronic acid) in rheumatism
AB . . . the specific enzyme hyaluronidase is increased. An accumulation of nonspecific substances takes place in rheumatic patients. They cause destruction of **hyaluronic** acid and non-specific substances are excreted with the urine. These substances are found also in the urine of normal persons but in a much smaller amt. These nonspecific substances include ascorbic acid, diazo compds. and azoproteins, lecithin, **thiolactic** acid, some P compds., etc. Following treatment with salicylates the activity of hyaluronidase is depressed and the amt. of nonspecific. . .

L8 ANSWER 21 OF 21 CAPLUS COPYRIGHT 2002 ACS
TI Diffusing factors. The hyaluronidase activity of testicular extracts, bacterial culture filtrates and other agents that increase tissue permeability
AB The assocn. between hyaluronidase activity (ability to hydrolyze **hyaluronic** acid, a mucopolysaccharide present in certain mucoproteins) and diffusing factors from various sources was described. The reduction of viscosity and. . . oxidation products also possessed both these properties. Reducing substances were not formed in either case. Other reducing substances such as **thiolacetic** acid, H2S, hydroquinone, pyrogallol, Na2SO3 and metol also decreased the viscosity of mucoprotein and had diffusing activity when injected. The. . .

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L8 ANSWER 5 OF 21 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1995:774579 CAPLUS
DOCUMENT NUMBER: 123:208920

TITLE: Thiol-containing biomaterials for medical and pharmaceutical use
INVENTOR(S): Constancis, Alain; Soula, Gerard
PATENT ASSIGNEE(S): Flamel Technologies, Fr.
SOURCE: Fr. Demande, 28 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2707992	A1	19950127	FR 1993-9198	19930721
FR 2707992	B1	19951013		
WO 9503272	A1	19950202	WO 1994-FR914	19940721
W: JP, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 710226	A1	19960508	EP 1994-922288	19940721
EP 710226	B1	19981014		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
JP 09503490	T2	19970408	JP 1994-504980	19940721
AT 172191	E	19981015	AT 1994-922288	19940721
US 5646239	A	19970708	US 1996-578539	19960306

PRIORITY APPLN. INFO.: FR 1993-9198 19930721
WO 1994-FR914 19940721
OTHER SOURCE(S): MARPAT 123:208920

L8 ANSWER 6 OF 21 CAPLUS COPYRIGHT 2002 ACS
ACCESSION NUMBER: 1994:570103 CAPLUS
DOCUMENT NUMBER: 121:170103
TITLE: Synthetic polysulfated hyaluronic acid is a potent inhibitor for tumor necrosis factor production
AUTHOR(S): Chang, Nan Shan; Intrieri, Catherine; Mattison, Jeffery; Armand, Gerard
CORPORATE SOURCE: Lab. Mol. Immunol., Guthrie Res. Inst., Sayre, PA, USA
SOURCE: J. Leukocyte Biol. (1994), 55(6), 778-84
CODEN: JLBIE7; ISSN: 0741-5400
DOCUMENT TYPE: Journal
LANGUAGE: English

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COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	92.21	92.36

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL